**Figure 14**

Cohort 1: Viewing at age 4 predicting test score advantage (+) or disadvantage (—) at age 5.

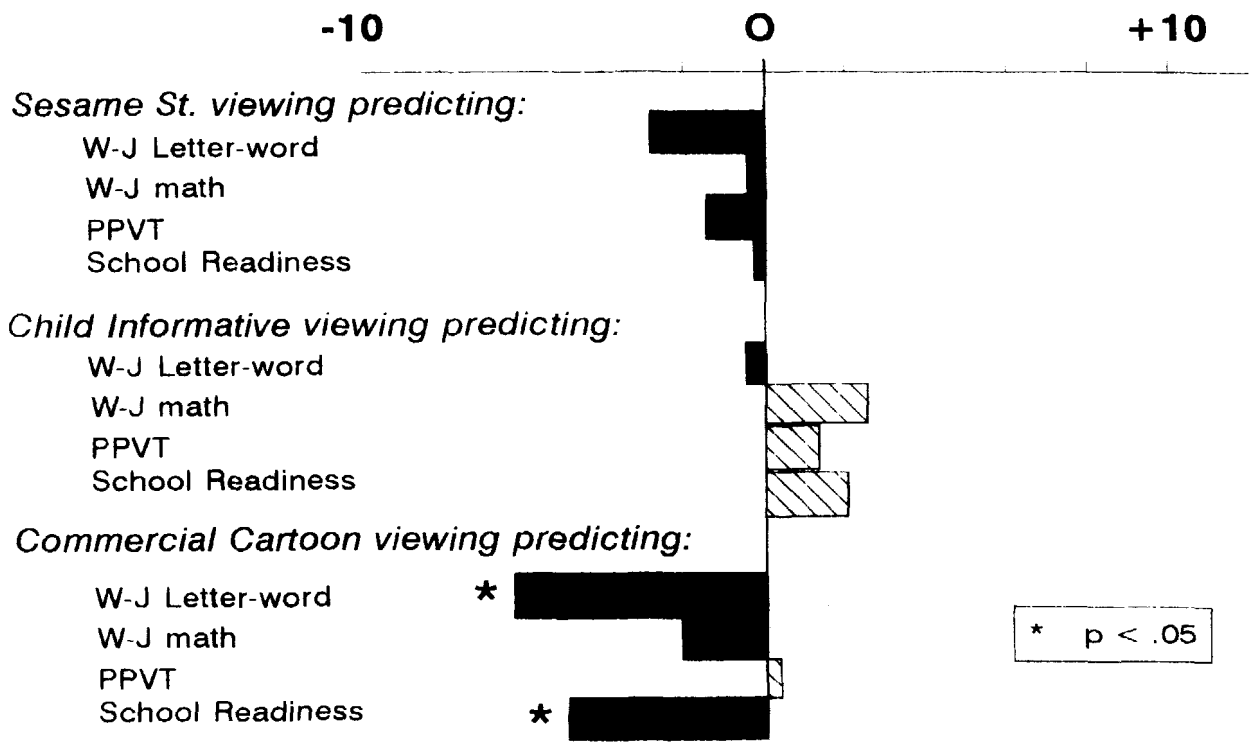
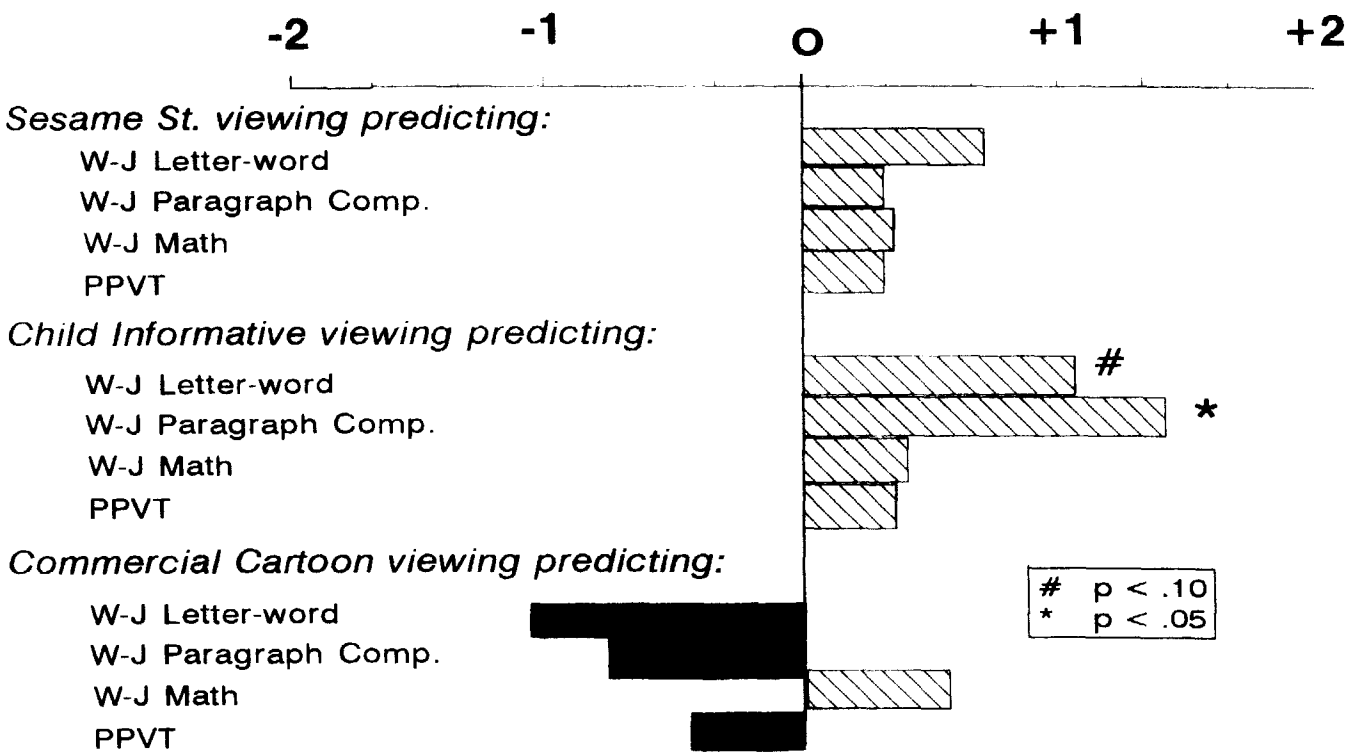


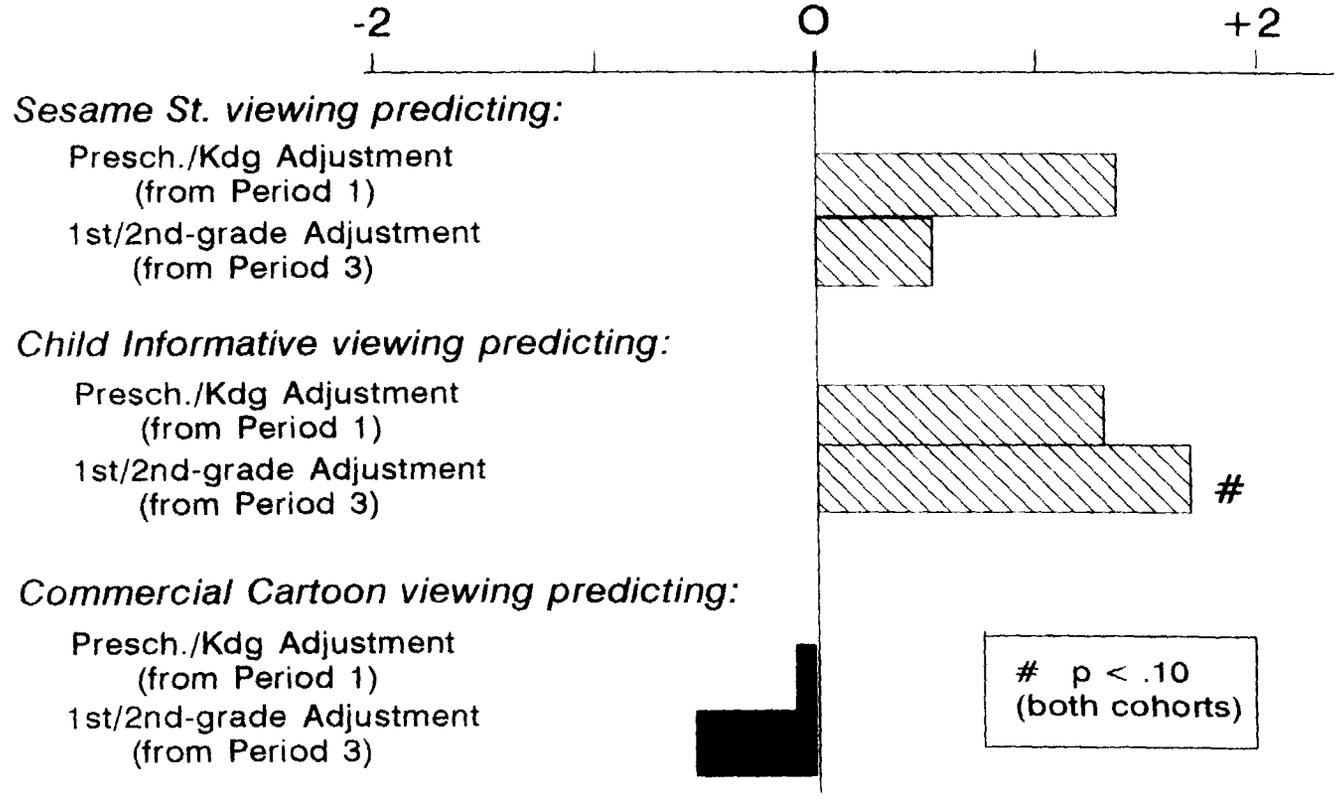
**Figure 15**

## Cohort 2: Viewing at age 6 predicting test score advantage (+) or disadvantage (−) at age 7.



## Figure 16

Prior viewing predicting preschool/kdg and grade 1/2 school adjustment advantage (+) or disadvantage (−).



The significant effects of viewing on the outcome measures was almost entirely limited to the younger cohort. Clearly these effects are strong early influences. From what we know about early trajectories in child development, it is likely that these effects will initiate a chain of influence that will affect the child in many ways in later development. That the impact of viewing in early childhood is stronger than that in middle childhood merely reflects the diversity of environmental influences that affect development in middle childhood and beyond. Conversely the negative effects of cartoon viewing begin to appear and develop in middle childhood. A different study with different children is in progress at CRITC that will address the long-term effects of early childhood television viewing on academic achievement of those children through high school and beyond.

## *CONCLUSIONS*

*1. All television viewing is not alike. In these low- to moderate-income families, children who watched educational programs were not heavy television viewers across the board. In fact they spent less time watching cartoons and adult programs than other children did. By contrast, heavy viewers of cartoons were also heavy viewers of adult programs. These children had less supportive and stimulating home environments than did light viewers of cartoons and adult programs.*

*2. Educational television does not displace other valuable educational experiences. Viewing educational programs is part of a pattern of activities that includes reading and being read to, as well as educational activities at home and in preschool. By contrast, viewing commercial cartoons may displace using books and reading.*

*Educational television and video games do appear to compete with each other for children's time or interest; those who spend more time playing video games spend less time watching educational programs.*

*3. Early educational viewing does appear to contribute to children's school readiness. Children who watched Sesame Street and other children's informative programs when they were two to four years old performed better than non-viewers on tests of reading, math, vocabulary, and school readiness, as much as three years later.*

*4. Viewing non-educational cartoons shows a consistent pattern of effects in the opposite direction of the beneficial effects of viewing informative programs.*

*5. Children who regularly watched children's informative programs in the age range of six to seven years performed better on tests of reading comprehension and on teacher's judgments of school adjustment in 1st and 2nd grade than did infrequent viewers, but in general there were fewer significant effects of television viewing among children in the older cohort than in the younger one.*

*6. Viewing made a contribution above and beyond the contributing characteristics of the child's home and history. The differences associated with educational television viewing occurred even when initial language skills, family education, income, and the quality of the home environment were taken into account.*

*7. Watching* Sesame Street *and other educational programs for children is part of a larger package of experiences that support school readiness. It is not an incidental part of the package, but one that makes a measurable independent contribution to children's acquisition of school-related skills. In sum,* Sesame Street *is an important part of a balanced television diet for young children.*

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Appendix A.

Descriptive charts on the sample's access to, and use of, various media:

Figure 17

# Number of TV Sets - 4 Waves

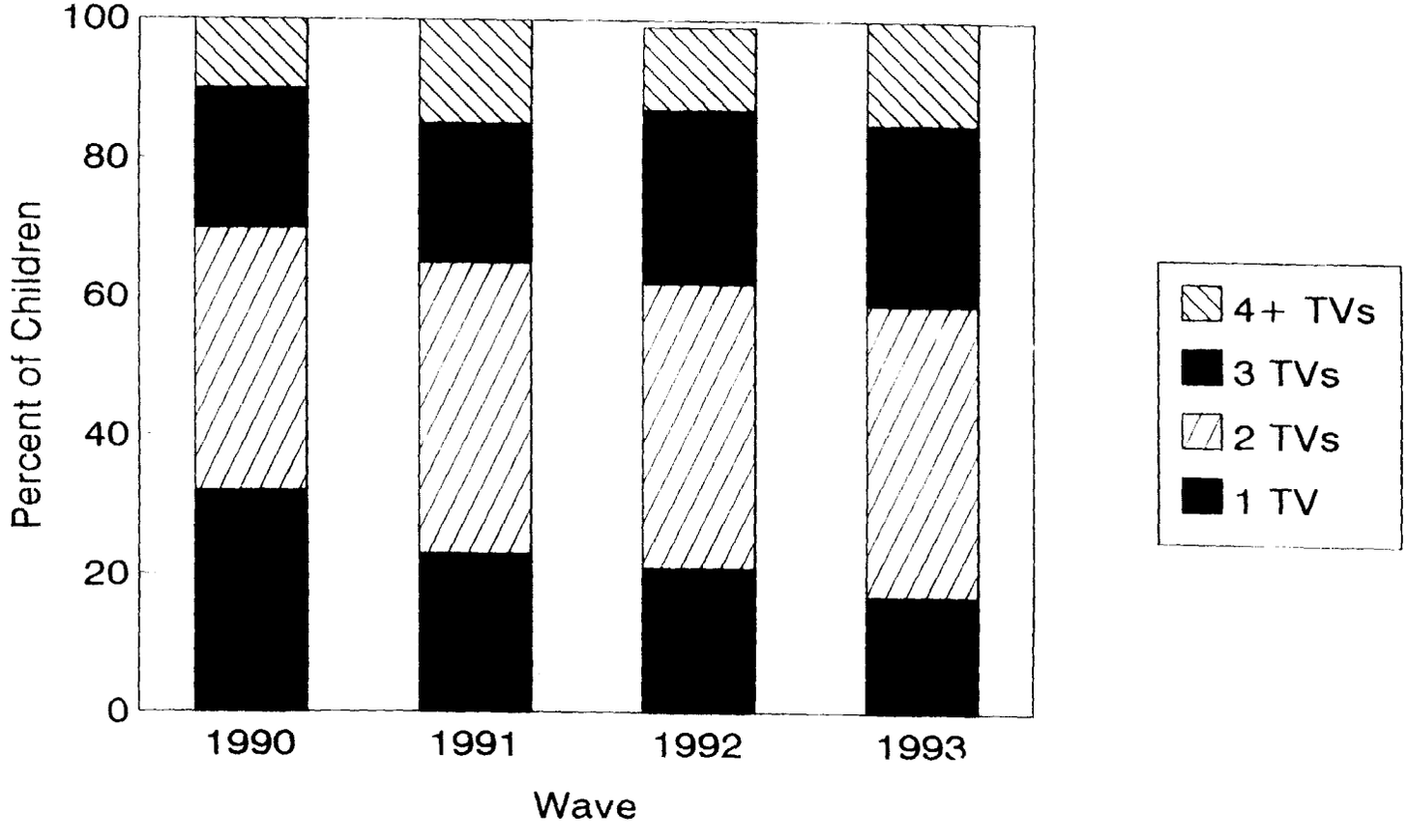


Figure 18

## Percent of Children with Different Cable Options

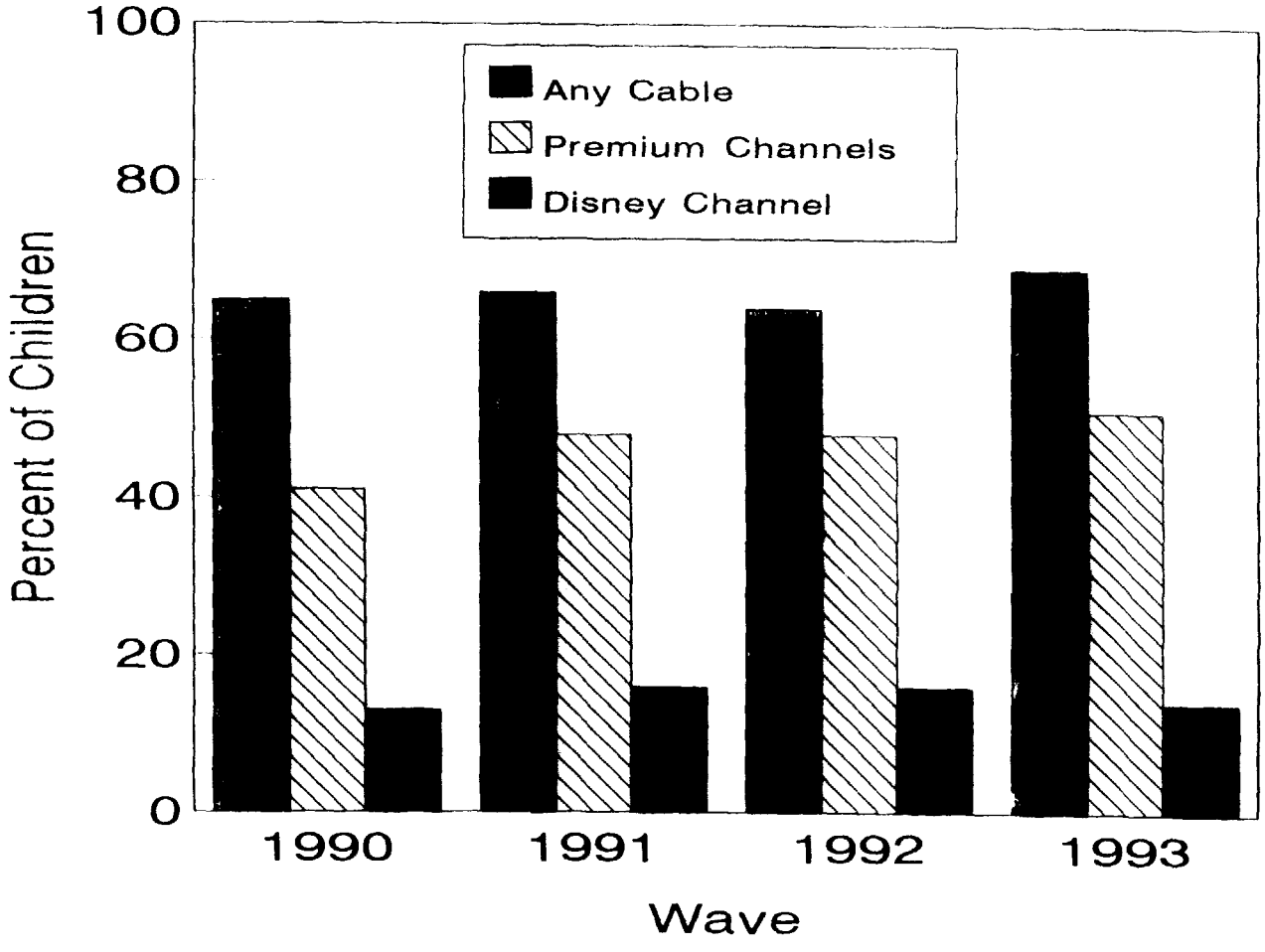


Figure 19

## Number of VCRs - 4 Waves

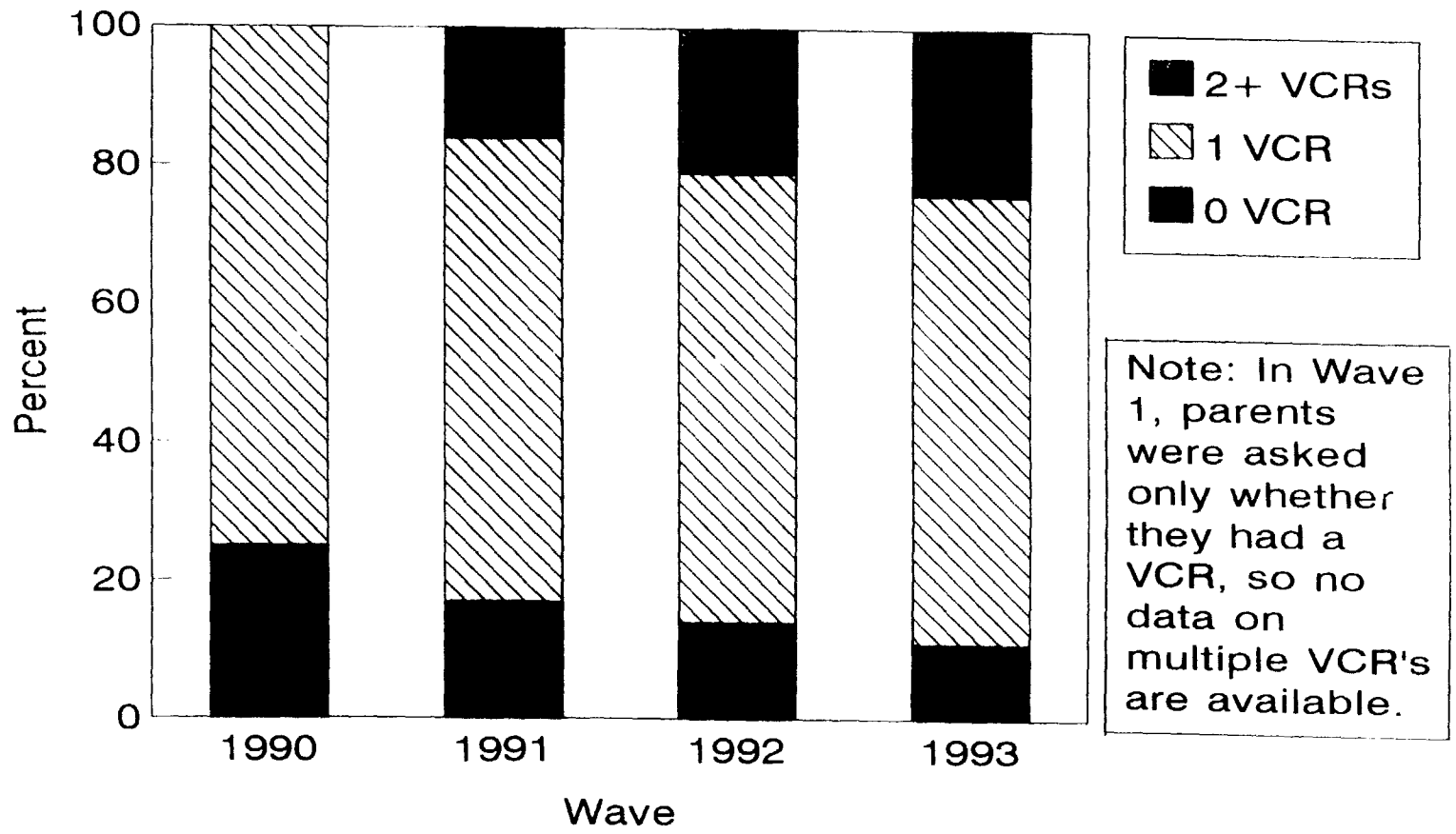


Figure 20

# Percent of Families Who Own Videotapes and Videogames

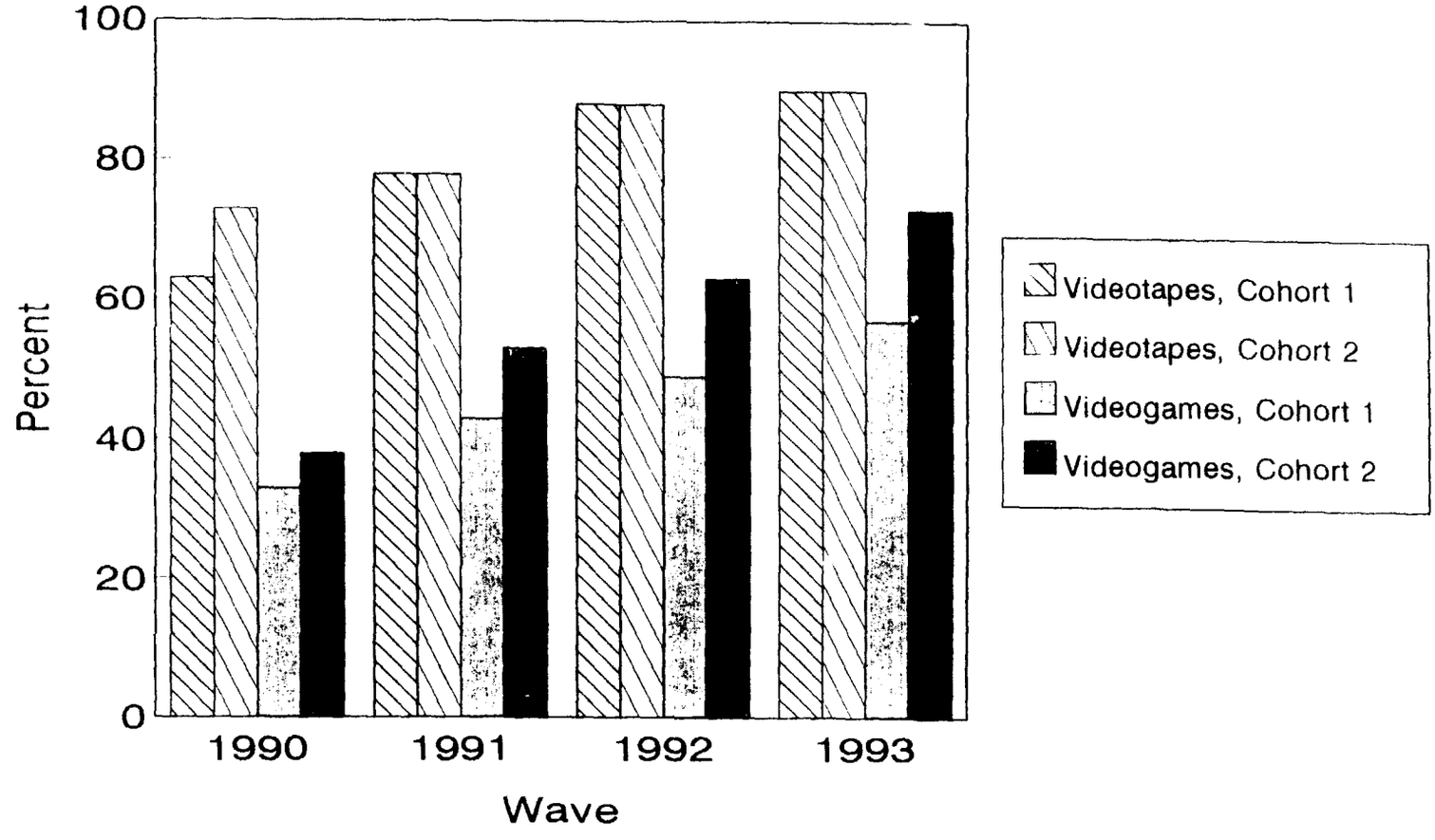


Figure 21

# Frequency of Using Videotapes and Videogames

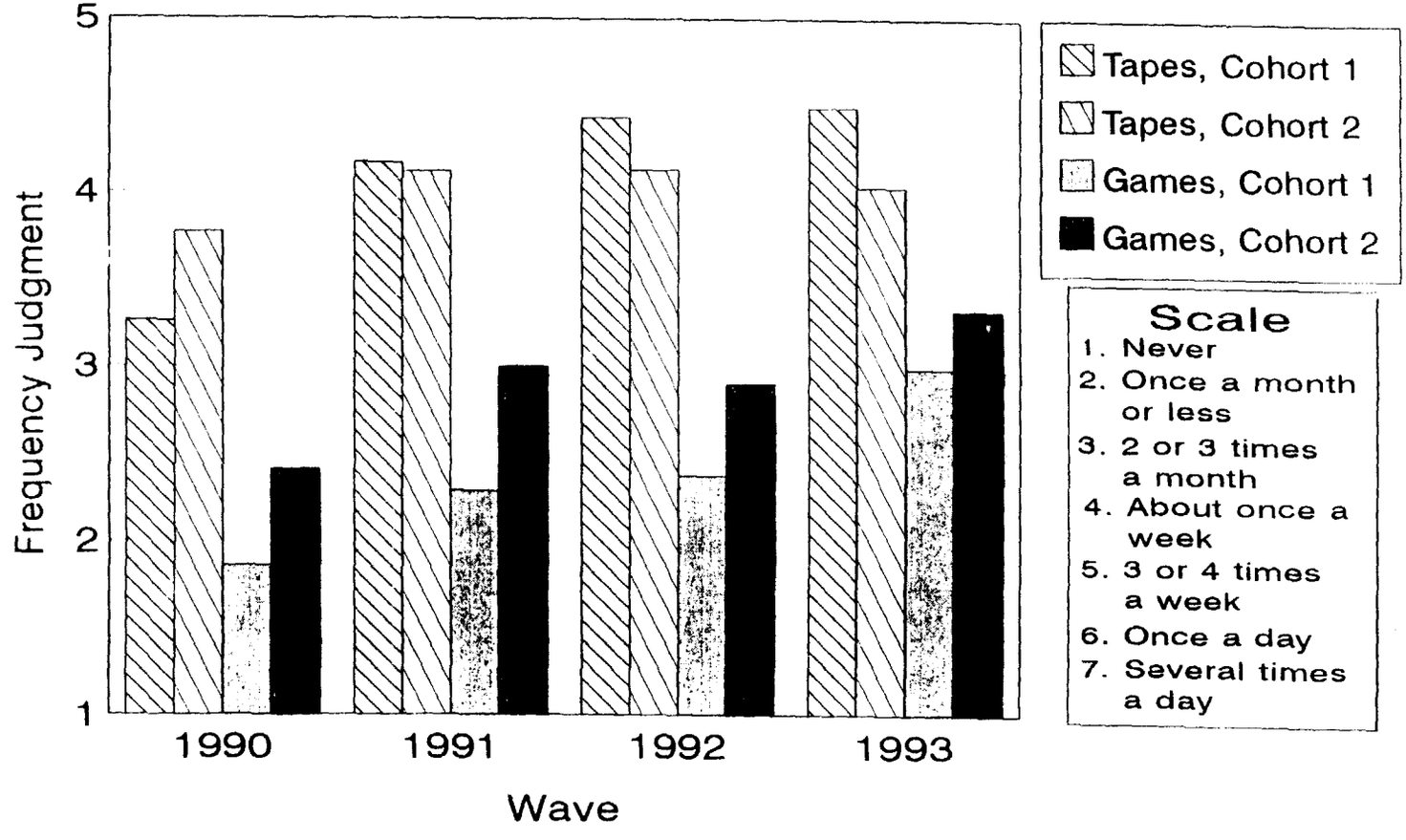
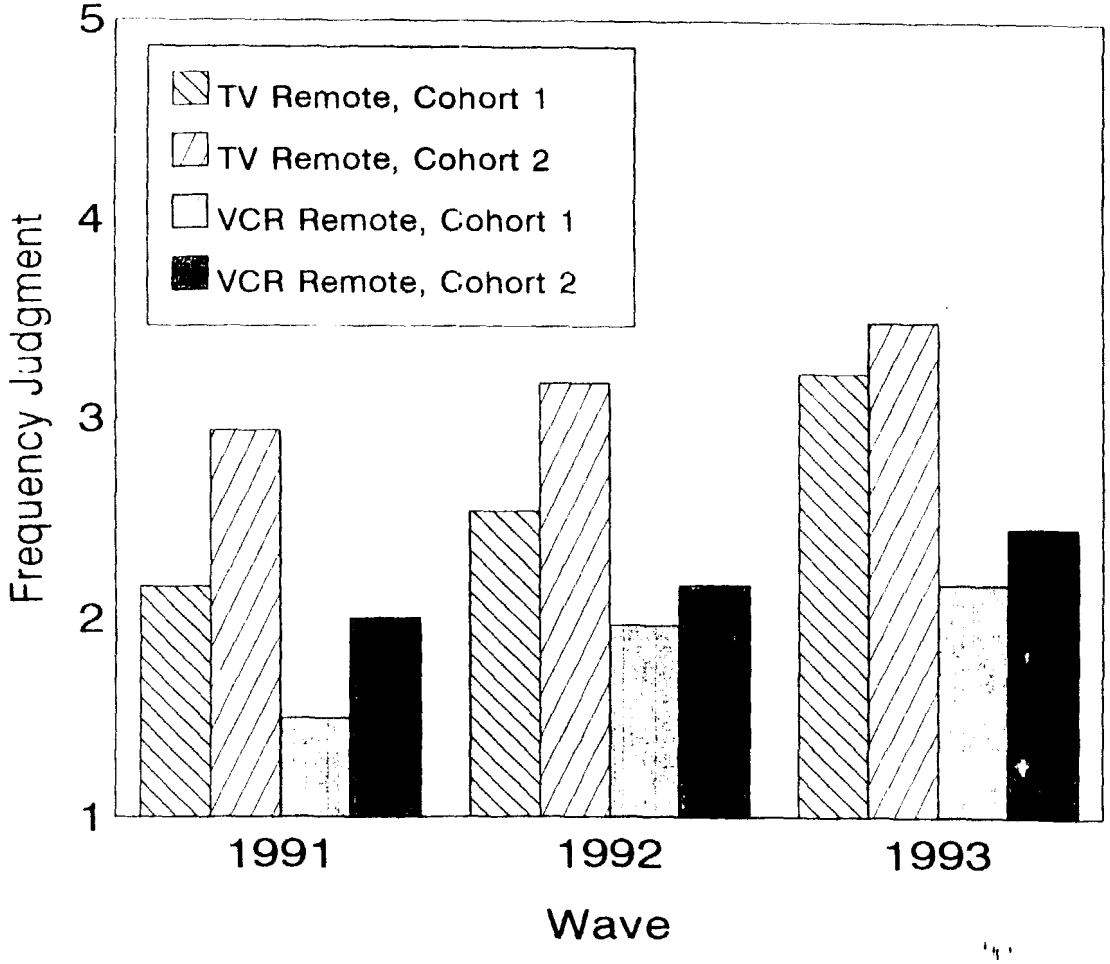


Figure 22

# Frequency of Using Remote Controls




**Scale**

1. Never
2. Less than once a month
3. About once a month
4. 2 or 3 times a month
5. Once a week or more

Note: This question was not asked at Wave 1.

Figure 23

## Percent of Families Who Own Personal Computers

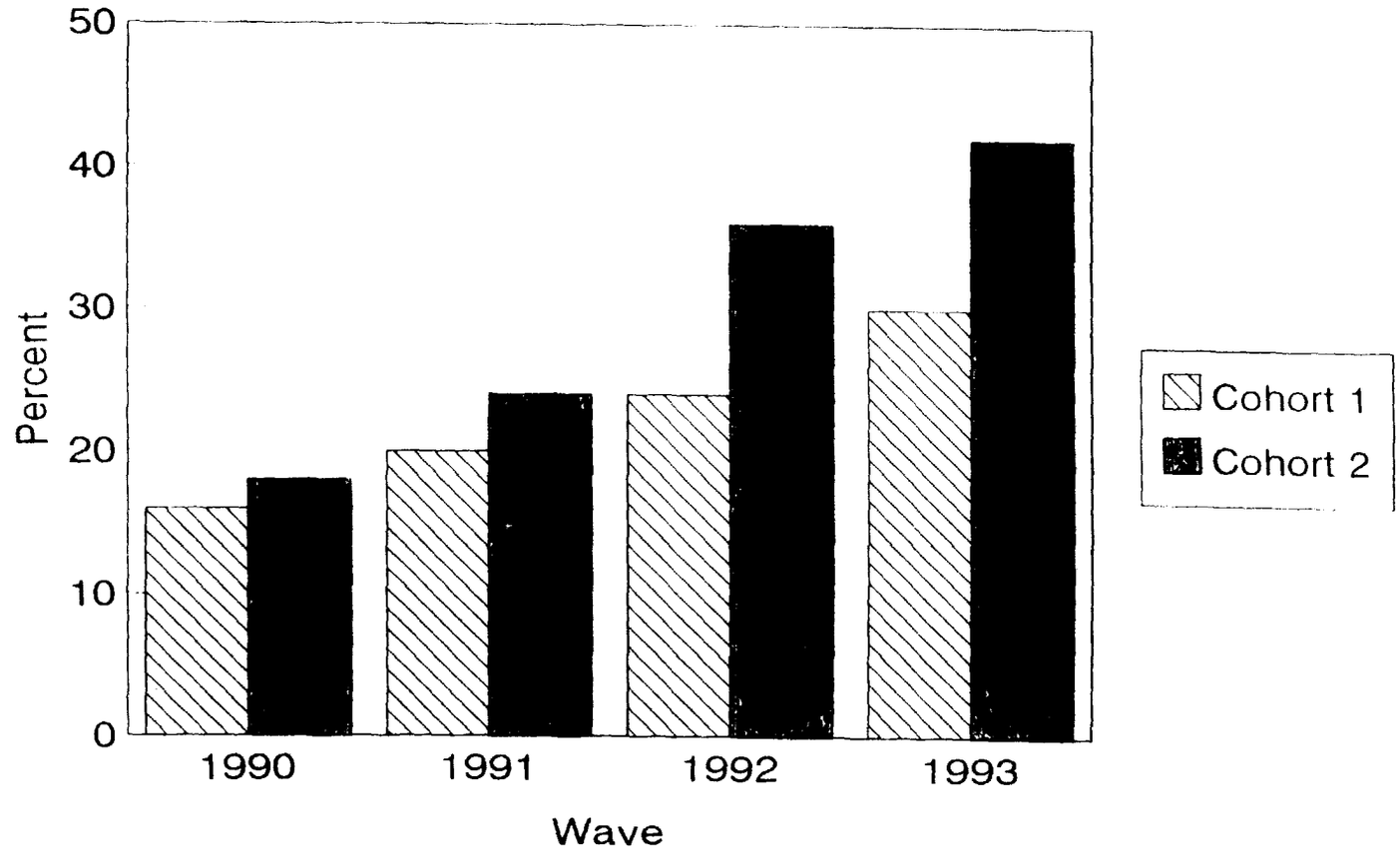


Figure 24

Frequency of Using Personal Computers

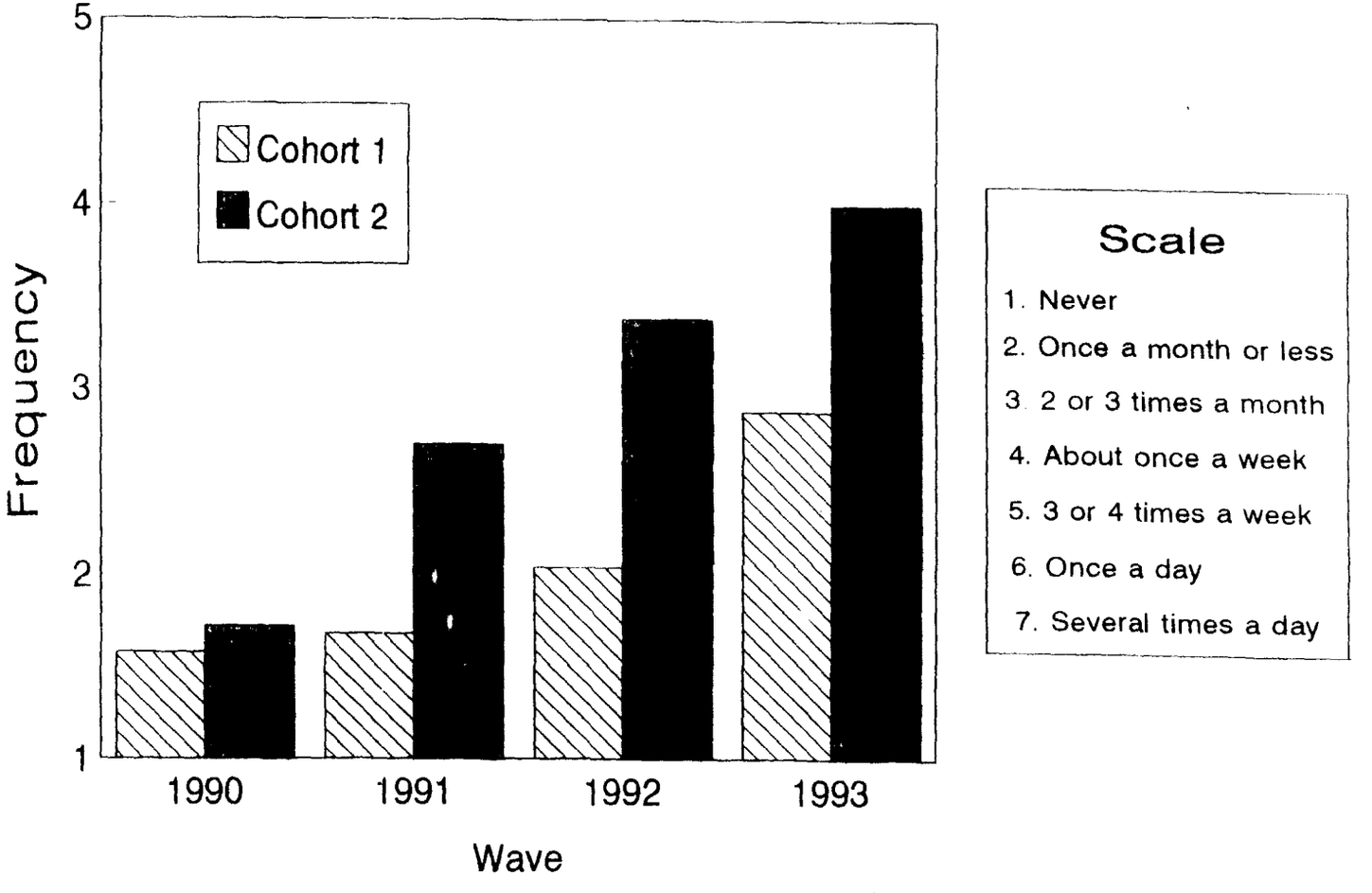
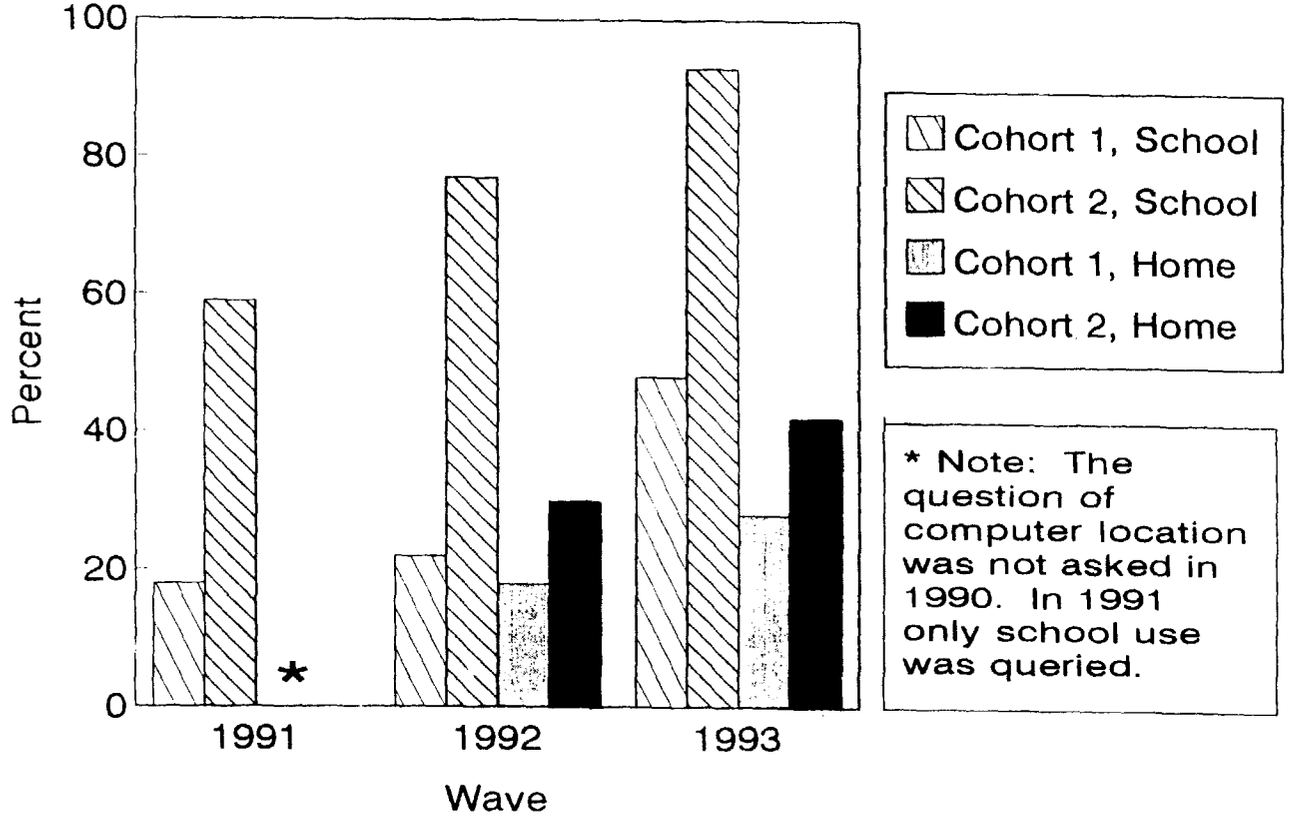


Figure 25

## Where Children Use Personal Computers



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# Viewing of Sesame Street By Preschool Children in the United States and Its Relationship to School Readiness

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Report prepared for
**Children's Television Workshop**

June 23, 1994

# EXECUTIVE SUMMARY

Data from the 1993 National Household Education Survey were used to examine the extent to which young children from different family backgrounds and areas of the U.S. watch the educational television program Sesame Street. The survey data were also analyzed to determine whether viewing of the program is associated with signs of emerging literacy and numeracy in preschool children, and with better achievement and fewer academic problems in early elementary students.

Sesame Street was found to have an extremely broad and diverse body of child viewers. Eighty-six percent of kindergarten and first and second grade students were reported to have watched the program for a period of three months or more prior to beginning school. Seventy-seven percent of all preschoolers and 60 percent of all kindergartners were said to be current viewers of the program. Younger preschoolers were more likely to watch than older preschoolers or kindergartners, but Sesame Street was found to be reaching majorities of young children in virtually all demographic groups.

The study found ample evidence that Sesame Street is being viewed by most of the children who can be considered "at risk" of experiencing difficulties once they reach school. For example, 85 percent of early elementary pupils from low income families watched Sesame Street prior to starting school, as did 90 percent of black elementary pupils, and 83 percent of Hispanic pupils with Spanish-speaking mothers. In contrast to many other educational aids, which are more likely to be used by families with more education and income, Sesame Street viewing is just as common or only slightly less common among children of parents who have less than a high school education or poverty-level or near-poverty incomes as among children of parents with more education and higher incomes. Indeed, young children who live in communities with high concentrations of child poverty are more likely to be viewers of the program than preschoolers living in areas with less child poverty.

The study found that viewers of Sesame Street were more likely to show signs of emerging literacy in the preschool years. Preschoolers who were or had been viewers of the program were more likely to be able to identify colors by name, count to twenty, recognize letters of the alphabet, and tell connected stories when pretending to read. The viewing-related differences were more pronounced among four-year-olds from low-income families than among those from non-poor families. The developmental differences between viewers and non-viewers remained significant when other relevant child and family characteristics, including frequency of parental reading and preschool program attendance, were controlled by means of regression analysis. However, watching Sesame Street did not completely close the gap between preschoolers from poor families and those from higher-income households.

Among first and second graders, those who had watched Sesame Street prior to beginning school were more likely to be reading storybooks on their own and less likely to be receiving special help in school for reading problems. These differences held up after other child and family characteristics were controlled. On the other hand, differences between former viewers and non-viewers in the frequency of having repeated a grade, having received negative feedback from the teacher, or being in the lower half of the class were not statistically significant, though most trends were in the direction that favored Sesame Street viewers.

Because the data were based on a cross-sectional survey, rather than a longitudinal study or randomized experiment, it is not possible to be certain about the direction of causation or rule out the possibility that observed differences in children's development were due to other factors that were correlated with but not caused by Sesame Street viewing. Although this caveat must be kept in mind, the survey findings do seem to support the belief that high-quality children's television programs in general, and Sesame Street in particular, can play an important role in aiding parents to be their children's first teachers and in helping young children get ready for school.

# INTRODUCTION

The noted educator Ernest Boyer has written that, "Next to parents, television is, perhaps, a child's most influential teacher." Almost since the inception of broadcasting, however, many teachers and sizable numbers of parents have been concerned about the amount of television children watch and about the deleterious influence it may be exerting on young people's development. Year by year, the most negative characterizations of commercial television programming -- phrases such as Newton Minnow's "a vast wasteland," Aleksandr Solzhenitsyn's "a river of liquid manure," and E.B. White's "an unbearable disturbance of the general peace" -- seem to become more rather than less applicable.

There is one group of television programs that most parents and educators are glad to let children watch, namely, the Public Broadcasting Service's offerings for young children, including the most famous of them all, "Sesame Street." The pioneering production of the Children's Television Workshop, which celebrated its 25th anniversary in 1994, still features Jim Henson's Bert and Ernie, Big Bird, Cookie Monster, and a host of other Muppet and animated characters, as well as human actors and celebrities who make guest appearances to promote various letters, numbers, words, and concepts. Now viewed by children in more than eighty countries, the program also contains new and updated segments, some of them addressing current concerns such as cultural diversity, language minorities, and children with disabilities.

Sesame Street has received numerous awards and been widely praised for contributing to children's school readiness and raising public awareness about the importance of providing children with intellectual and cultural stimulation during the preschool years. There have been several research studies on Sesame Street, focusing mostly on the short-term effects of watching the program on children's cognitive development. There has been little research on possible long-term benefits (or hazards) of early exposure to the program, nor has Sesame Street been studied in the context of a nationally representative sample of young children.

These topics have special relevance nowadays because insuring that all children are ready for school is one of the National Education Goals for the Year 2000 that have been adopted by Presidents Bush and Clinton, the nation's Governors, the U.S. Congress, and many educators throughout the country. In the influential book, Ready To Learn: A Mandate For the Nation, Ernest Boyer and the Carnegie Foundation for the Advancement of Teaching proposed that educational television had a definite role to play in promoting school readiness. Congress agreed, passing legislation and appropriating funds to encourage new and expanded programming for young children and their parents.

The appropriate role for television in the nurturing of young children is a topic not without controversy. Some early childhood experts want to greatly reduce preschoolers' exposure to television, preferring that young children spend more time in interaction with their parents and the real world. Some of these experts contend that viewing Sesame Street teaches children to watch television. Sesame Street has also received criticism for its fast pace and relatively brief segments, the argument being that this promotes short attention spans and a craving for stimulation. In recent years, conceptions of school readiness have moved away from a heavily cognitive orientation toward greater emphasis on social and emotional aspects of children's development. This has led some to question Sesame Street's strong focus on the learning of basic literacy and numeracy skills.

By contrast, most parents seem quite happy with Sesame Street and other PBS children's programs, feeling they are a positive influence on their youngsters. It is not uncommon, though, for parents to express some guilt about using television as an electronic babysitter.

An opportunity to gather national data on the viewing of Sesame Street and other PBS programs by young children in the U.S. arose during the design of the 1993 National Household Education Survey (NHES). This research program is a periodic national telephone survey conducted by Westat, Inc. for the National Center for Education Statistics of the U.S Department of Education. One of the topics that the 1993 survey was to focus on

was school readiness. Because of the prominent role that television plays in the lives of young children, it seemed logical to include a few items in the survey questionnaire to gauge current viewing of Sesame Street and other PBS programs by preschoolers and kindergartners, and the previous viewing of Sesame Street by kindergartners and first and second graders before they started their formal schooling. This would not only allow estimates of the extent of such viewing by children of different ages and social backgrounds, but also allow correlations to be drawn between educational television viewing and other aspects of the child's home environment and development.

Because of their natural interest in new national data on Sesame Street viewing, the Children's Television Workshop commissioned Westat to analyze the relevant items and their demographic and developmental correlates and prepare a report on the findings. The analysis was intended to answer four major questions. They were as follows:

1) How extensively is Sesame Street viewed by America's preschool children? In particular, is the program seen by those from families that may provide their offspring with less stimulating and supportive home environments, due to low parent education or family income levels, lack of parental facility with the English language, or other disadvantages?

2) How much does Sesame Street viewing vary by child and family characteristics, such as age, sex, race and Hispanic origin, by geographic areas, and across areas with relatively high to relatively low concentrations of child poverty?

3) Do preschoolers who currently watch Sesame Street show a higher frequency of developmental accomplishments, such as being able to count to twenty or identify most letters of the alphabet, than those who do not watch the show?

4 Do elementary schoolchildren with a history of having watched Sesame Street before they started kindergarten have fewer achievement and adjustment problems in school than those who did not watch the program as preschoolers?

The major findings of the study are presented in the next section, and the survey sample and methodology are described at the end of this report.

# FINDINGS

## A. Current Patterns of Sesame Street Viewing Among Young Children In the United States

According to reports from parents, viewing Sesame Street is a common activity for over 6.6 million American preschool children, and nearly 2.4 million kindergartners.[1] The program's widespread appeal is evidenced by the finding that 77 percent of preschool children currently watch Sesame Street once a week or more, and 86 percent of the nation's kindergarten, first, and second grade students are reported to have watched the program for some period prior to beginning school.[2]

Sesame Street remains the most popular of several public television programs aimed at the young child audience. For example, the relatively new and highly successful program, Barney and Friends, is watched once a week or more by 69 percent of preschoolers, compared to the 77 percent who watch Sesame Street. Mister Rogers' Neighborhood draws about 45 percent of preschool children, and 39 percent of preschoolers watch Reading Rainbow, which is aimed at an early elementary school audience. (Figure 1).

**Sesame Street reaches majorities of young children in virtually all demographic groups.** Sesame Street's broad coverage of the young child audience extends to most demographic subgroups, with majorities of children from all areas, ethnic groups, and socioeconomic strata having regular exposure to the program. This includes the economically disadvantaged children for whom the program was originally developed. The National Household Education Survey (NHES) data indicate that Sesame Street is indeed

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[1] The current viewing of Sesame Street by preschoolers and kindergartners was assessed by asking parents if, at the time of the survey, the child watched the program (as well as three other public television children's programs) "once a week or more, either at home or someplace else."

[2] The survey question specified that the child had to have watched at least once a week for a period of three months or more.